CLAIMS

What is claimed is:

1. A method for processing image data comprising:

processing input image data by identifying features of interest to produce processed image data;

characterizing spike noise in the input image data; and

performing spike noise dependent blending of data derived from the input image data with the processed image data based upon the characterization.

2. The method of claim 1, wherein the spike noise is characterized by rank-order filtering the input image data.

3. The method of claim 2, wherein the spike noise is characterized by computing an absolute difference between the rank-order filtered input image data and the input image data.

4. The method of claim 3, wherein the spike noise is characterized by generating a multi-level mask of spike noise likelihood based upon the absolute differences.

5. The method of claim 2, wherein the rank-order filtered input image data is blended with the processed image data.

6. The method of claim 1, wherein blending via a first weighting factor is performed on discrete picture elements determined not to exhibit spike noise, and blending via at least one second weighting factor is performed on discrete picture elements determined to exhibit spike noise.

7. The method of claim 1, wherein the data derived from the input image data is determined by shrinking an input image by a desired factor and interpolating the resulting image to the size of the input image.

8. A method for processing image data comprising:

processing input image data by identifying features of interest to produce processed image data;

characterizing spike noise in the input image data by rank-order filtering the input image data, computing an absolute difference between the rank-order filtered input image data and the input image data, and generating a multi-level mask of spike noise likelihood based upon the absolute differences; and

performing spike noise dependent blending of input image data with the processed image data based upon the multi-level mask.

9. The method of claim 1, wherein the mask encodes weighting factors for blending of data corresponding to discrete picture elements.

10. The method of claim 1, wherein the features of interest include structural regions defined by the input image data.

11. A method for processing image data comprising:

processing input image data by identifying features of interest to produce processed image data;

determining a likelihood that discrete picture elements in the input image data exhibit spike noise; and

blending data derived from the input image data with the processed image data via weighting factors determined based upon the likelihood that the discrete picture elements exhibit spike noise.

12. The method of claim 11, wherein the likelihood is determined by rank-order filtering the input image data.

13. The method of claim 12, wherein the likelihood is determined by computing an absolute difference between the rank-order filtered input image data and the input image data.

14. The method of claim 13, wherein the likelihood is determined by generating a multi-level mask of spike noise likelihood based upon the absolute differences.

15. The method of claim 12, wherein the rank-order filtered input image data is blended with the processed image data.

16. The method of claim 11, wherein blending via a first weighting factor is performed on discrete picture elements determined not to exhibit spike noise, and blending via at least one second weighting factor is performed on discrete picture elements determined to exhibit spike noise.

17. The method of claim 11, wherein the data derived from the input image data is determined by shrinking an input image by a desired factor and interpolating the resulting image to the size of the input image.

18. A system for processing image data comprising:

a memory circuit for storing input image data;

a processing module for processing the input image data to generate processed image data; and

a spike noise blending module configured to determine a likelihood that discrete picture elements in the input image data exhibit spike noise, and to blend data derived from the input image data with the processed image data via weighting factors

determined based upon the likelihood that the discrete picture elements exhibit spike noise.

19. The system of claim 18, wherein the processing module and the blending module are defined by computer code in an appropriately programmed computer system.

20. The system of claim 18, further comprising an image acquisition system for generating the input image data.

21. A system for processing image data comprising:

means for processing input image data by identifying features of interest to produce processed image data;

means for characterizing spike noise in the input image data; and

means for performing spike noise dependent blending of data derived from the input image data with the processed image data based upon the characterization.

22. A system for processing image data comprising:

means for processing input image data by identifying features of interest to produce processed image data;

means for characterizing spike noise in the input image data by rank-order filtering the input image data, computing an absolute difference between the rank-order filtered input image data and the input image data, and generating a multi-level mask of spike noise likelihood based upon the absolute differences; and

means for performing spike noise dependent blending of input image data with the processed image data based upon the multi-level mask.

23. A system for processing image data comprising:

means for processing input image data by identifying features of interest to produce processed image data;

means for determining a likelihood that discrete picture elements in the input image data exhibit spike noise; and

means for blending data derived from the input image data with the processed image data via weighting factors determined based upon the likelihood that the discrete picture elements exhibit spike noise.

24. A computer program for producing an image from image data comprising:

at least one computer readable medium; and

code stored on the at least one computer readable medium encoding routines for processing input image data by identifying features of interest to produce processed image data, characterizing spike noise in the input image data, and performing spike noise dependent blending of data derived from the input image data with the processed image data based upon the characterization.

25. A computer program for processing image data comprising:

at least one computer readable medium; and

code stored on the at least one computer readable medium encoding routines for processing input image data by identifying features of interest to produce processed image data, characterizing spike noise in the input image data by rank-order filtering the input image data, computing an absolute difference between the rank-order filtered input image data and the input image data, and generating a multi-level mask of spike noise likelihood based upon the absolute differences, and performing spike noise dependent blending of input image data with the processed image data based upon the multi-level mask.

26. A computer program for processing image data comprising:

at least one computer readable medium; and

code stored on the at least one computer readable medium encoding routines for processing input image data by identifying features of interest to produce

processed image data, determining a likelihood that discrete picture elements in the input image data exhibit spike noise, and blending data derived from the input image data with the processed image data via weighting factors determined based upon the likelihood that the discrete picture elements exhibit spike noise.

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